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IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF WYOMING

Biodiversity Conservation Alliance and Sierra Club,	)	
Plaintiffs,	)	Case No. 04CV 361-B
v.	)	
Mountain Cement Company,	)	
Defendant.	)	

DEFENDANT'S MOTION FOR SUMMARY JUDGMENT AND SUPPORTING BRIEF CONCERNING OPACITY AND PARTICULATE MATTER EMISSION STANDARDS, AND RESPONSE TO PLAINTIFFS' MOTION FOR PARTIAL SUMMARY JUDGMENT TO ESTABLISH ALLEGED KILN #2 OPACITY VIOLATIONS

Defendant Mountain Cement Company ("Mountain Cement") for the following reasons requests that summary judgment be granted in its favor and that Plaintiffs' complaint be dismissed with prejudice. In the alternative, Mountain Cement requests that Plaintiffs' Motion for Partial Summary Judgment be denied.

I.

INTRODUCTION

The dispute between Plaintiffs, Biodiversity Conservation Alliance and Sierra Club, (collectively "Biodiversity") and the Defendant Mountain Cement, can be simply stated. Plaintiffs believe certain releases of dust from two stacks at Defendant's cement plant have for the past five years *violated* the terms of the permit limiting those releases. Defendant, while conceding the opacity of those releases (also referred to as emissions) have *exceeded* the permit limits, believes the number of *violations* resulting from those releases is far smaller than Plaintiffs claim and that any *violations* that have occurred were fully and finally resolved by a lawsuit brought by the state of Wyoming.

In Defendant Mountain Cement's view, the undisputed facts require dismissal with prejudice. Alternatively, and at a minimum, Mountain Cement believes there exists disputes about that existence of violations versus exceedances that preclude Biodiversity's motion for partial summary judgment.

II.

UNDISPUTED MATERIAL FACTS

1. Mountain Cement owns and operates a two kiln cement plant outside of Laramie, Wyoming. Affidavit of Dan Olson, attached as Ex. A at ¶ 17 ("Olson Aff."); Affidavit of Ralph Roberson, attached as Ex. B at ¶¶11 – 12 ("Roberson Aff.").

2. Among the stacks authorized to release dust at that plant is one associated with Kiln #2 ("Kiln 2 Stack") and another stack associated with the coolers for clinker produced by both kilns ("Clinker Cooler Stack"). Olson Aff. at ¶¶ 18 – 19.

3. From June 2, 1999, to March 14, 2004, the emissions to the air from the plant were subject to Operating Permit No. 30-098, and from March 15, 2004, to the present to Operating Permit No. 31-098. Affidavit of William Sansing, attached as Ex. C at ¶¶ 8 – 9 ("Sansing Aff.").

4. Between December 23, 1999, and December 31, 2004, Mountain Cement reported 13,003 exceedances of the opacity standard for the Kiln 2 Stack.[1] Affidavit of Thomas Keeler, attached as Ex. D, of ¶ 19 ("Keeler Aff.").

5. Between December 23, 1999, and December 31, 2004, 12,683 of those exceedances were not subject to the opacity standards contained in the plant's air permits. Keeler Aff. at ¶¶ 7 – 18.

6. Between October 1, 1999, and December 31, 2004, reported 3,457 exceedances of the opacity standard for the Clinker Cooler Stack. Sansing Aff. at ¶¶ 23 – 24.

7. Between October 1, 1999, and December 31, 2004, 2,937 of the exceedances reported for the Clinker Cooler Stack were not subject to the opacity limits contained in the plant's air permits. *Id.*

8. Compliance testing of the pounds of dust released from the stack associated with Kiln 2 established the allowable limit on particulate matter for that stack has not been exceeded between December 23, 1999, and December 31, 2004. Id. at ¶ 25.

9. The state of Wyoming sued Mountain Cement on December 17, 2004, and included in that lawsuit or could have included all exceedances of permit limits between the last

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[1] This five year period is used because there is a five year statute of limitations that applies to requests for civil penalties sought by Biodiversity. *Glazer v. American Ecology Envtl. Servs.*, 894 F.Supp. 1029, 1044 (E.D. Tex. 1995). While the total number of exceedances appears high the number needs to be compared to the total number of possible exceedances during this five year period – 414,000 (240 six month periods a day x 365 days x 5 years).

quarter of 1999 and the date that lawsuit was filed. In particular, the state alleged violations for the last three quarters of 2001 and the first two quarters of 2002. Ex. G; Olson Aff. at ¶¶ 35 – 38.

10. The lawsuit filed by the state of Wyoming on December 17, 2004, was resolved through a consent decree entered on March 21, 2005. Ex. H; Olson Aff. at ¶ 35.

11. The state of Wyoming believes that all exceedances associated with the Kiln 2 Stack and the Clinker Cooler Stack requiring an enforcement action have been resolved. Olson Aff. at ¶ 38.

12. There are two methods recognized by EPA for measuring compliance with opacity standards, Method 9, involving a trained observer, and a continuous opacity monitor system ("COMS"), involving use of a mechanical device attached inside of a stack. Roberson Aff. at ¶¶ 39 -47.

III.

ARGUMENTS AND AUTHORITIES

A. OF THE 16,460 OPACITY EXCEEDANCES REPORTED FOR THE KILN 2 STACK AND THE CLINKER COOLER STACK 15,620 ARE CONSIDERED TO HAVE BEEN CAUSED BY A START UP, SHUT DOWN, OR MALFUNCTION AT THE PLANT, AND UNDER THE TERMS OF THE PLANT'S AIR PERMIT ARE NOT VIOLATIONS.[2]

Since at least 1999, Mountain Cement has submitted to the Wyoming Department of Environmental Quality – Air Quality Division ("WDEQ-AQD") a quarterly excess emission report. Sansing Aff. at ¶¶ 18 – 22. Among other things, that report identifies every event

[2] Biodiversity seeks a finding that there have been 15,480 opacity exceedances from Kiln 2 Plaintiff's MSJ at 7. For the period December 23, 1999 to December 31, 2004 there have been at most 13,003 exceedances from Kiln 2. Moreover, Biodiversity has said it doesn't seek any penalties for exceedances specifically mentioned the WDEQ-AQD lawsuit. Plaintiff's MSJ at 23 n.6. That number is 6,661. If for no other reason, Biodiversity's motion must be denied for seeking a finding of more violations then the quarterly excess emission reports identify as exceedances and that Biodiversity claims can be used to calculate civil penalties.

constituting an exceedance of the opacity limits contained in the plant's air permit in effect at the time. *Id.*

Not every exceedance reported on that form is necessarily a violation of the plant's air permit. In particular, since at least 1999, the air permits applicable to the plant have provided that opacity standards do not apply during periods of start up, shut down or malfunction. Olson Aff. at ¶¶ 21 – 30.

Mountain Cement has identified in its quarterly excess emission report opacity exceedances that were caused by start up, shut down or malfunction. Sansing Aff. at ¶ 22. The determination of whether an event is caused by a start up, shut down or malfunction is made at or near the time of the event by a person charged with monitoring compliance with the plant's air permit, who has personal knowledge of the event, and who records the event and its cause at or near the time it occurred. Sansing Aff. at ¶¶ 18 – 21. To assist in properly categorizing exceedances of start up, shut down or malfunction the company established a check list of various explanations for an exceedance that could be characterized as a start up, shut down or malfunction and that was used in making reports to WDEQ-AQD.[3] *Id.*

Between December 23, 1999 and December 31, 2004, the quarterly excess emission report established that of the 13,003 exceedances reported, 12,683 were the result of start up, shut down or malfunctions. Keeler Aff. at ¶ 19. Thomas Keeler, an expert in the design, installation, and maintenance of electrostatic precipitators has independently reviewed those excess emission quarterly reports with respect to Kiln 2 and has reached the opinion that of the 13,003 exceedances reported between 1999 and the filing of the Biodiversity lawsuit for the

[3] In submitting these reports Mountain Cement is required to certify that it believes they are true, accurate, and complete.

Kiln 2 Stack 12,683 are properly considered as caused by start up, shut down or malfunctions. Keeler Aff. at ¶¶7 - 18.

Biodiversity disagrees that the opacity standards do not apply during periods of startup, shutdown or malfunction. It claims that the "Emergency" and "Abnormal Conditions and Equipment Malfunction" conditions, as described in state regulations, are the only times that the opacity standards do not apply. Additionally, Biodiversity argues that Mountain Cement was required to provide notice to the WDEQ-AQD within 24 hours to take advantage of the "Emergency" or "Abnormal Conditions" exceptions. Plaintiff's MSJ ¶¶ 17, 18. Both of these assertions are wrong.

In 1988 when EPA established opacity limits applicable to the Kiln 2 Stack and the Clinker Cooler Stack, it also provided that these limits do not apply during periods of startup, shutdown and malfunction. *See* 40 C.F.R. §§ 60.11(c), 60.62(a)(2), (b)(2). Wyoming incorporated these federal exceptions into Chapter 5 section 2 of the WAQSR, and they are incorporated into MCC's Operating Permit No. 30-098. WAQSR ch. 5 § 2(i)(iii); Olson Aff. at ¶¶ 24 – 27. Operating Permit No. 31-098 likewise incorporates similar opacity limits and the startup, shutdown, and malfunction exceptions adopted by EPA and incorporated into the WAQSR. See 40 C.F.R. §§ 63 (h)(1), 63.1343(b)(1), 63.134 (a)(2); WAQSR Ch. 5 § 3 (vii(A); Olson Aff. at ¶¶ 24 – 27.

Contrary to Biodiversity's assertions, the twenty-four hour notice is not required for the startup, shutdown or malfunction exceptions derived from federal law. Instead, the notice required to invoke the federally-based exceptions is set forth in the facility-specific provisions of Mountain Cement's air permits. They require that Mountain Cement identify in quarterly excess emission reports "each period of excess emissions that occurs during startups, shutdowns, or

malfunctions of Kilns No. 1 and No. 2, the nature and cause of any malfunction, and the corrective action taken or preventative measures adopted." *See* Ex. E, Operating Permit 30-098(F9); Ex. F, Operating Permit 31-098(F26)(b). Mountain Cement has been told that the federally based exceptions available at the startup, shutdown, or malfunction event are to be included in a quarterly excess emission report. Sansing Aff. at ¶ 27.

In short, Mountain Cement is entitled to summary judgment that of the 13,003 exceedances it has reported for the Kiln 2 Stack and the Clinker Cooler Stack between December 23, 1999, and December 23, 2004, 12,683 are not violations.

Alternatively, there exists a dispute as to the existence of the number of violations, if the Court chooses not to grant Mountain Cement's summary judgment on this point.

B. COMS DATA CANNOT BE USED TO ESTABLISH VIOLATIONS OF THE OPACITY STANDARD UNDER OPERATING PERMIT NO. 30-098 FOR KILN 2 OR THE CLINKER COOLERS.

The opacity standard in Operating Permit No. 30-098, which governed plant operations from June 2, 1999 to March 14, 2004, is found in the Facility Specific Permit Conditions provision F3(a) as well as in the New Source Performance Standards ("NSPS") Subpart F Requirements (NSPS-F1). Olson Aff. at ¶ 21. The source of this opacity limit is the relevant federal regulations in subpart F of 40 C.F.R. Part 60, which is incorporated into the Wyoming Air Quality Standards and Regulations in Chapter 5, Section 2. *Id.* ¶¶ 23, 24. Subpart F incorporates Subpart A of 40 C.F.R. Part 60, which Wyoming has incorporated into Chapter 5, section 2 of the Wyoming Air Quality Standards and Regulations. *Id.* ¶ 25. As stated by Olson, "The purpose of the foregoing background is to make clear that the state of Wyoming intended that the opacity conditions in Operating Permits 30-098 and 31-098 be construed consistent with the regulatory provisions from which they are derived. Stated another way, the Federal

Regulations described in Paragraphs 24, 25, 26, and 27 are considered to be part of the Operating Permit to which they apply." *Id.* ¶ 28.

The Wyoming and Federal Regulations that are part of Operating Permit No. 30-098 require that compliance with opacity standards be determined by EPA Reference Method 9, not COMS. In particular, WAQSR Chapter 5 § 2, which applies to Operating Permit No. 30-098, states as follows:

> *(i)* Compliance with standards and maintenance requirements:
>
> > *(i)* Compliance with standards in this part, other than opacity standards, shall be determined by performance tests established by Chapter 5, Section 2(h), unless otherwise specified in the applicable standard.
> >
> > *(ii)* *Compliance with opacity standards in this part shall be determined by conducting observations in accordance with Reference Method 9* in 40 CFR part 60, Appendix A or any alternative method that is approved by the EPA Administrator, or as provided in paragraph (v)(D) of this section [which allows companies to choose to submit COMS data *collected during a performance test* in lieu of Method 9 data].[4] ...

Thus, under Wyoming law, compliance with the opacity standards for the Kiln 2 Stack and Clinker Cooler Stack for the period June 2, 1999 to March 14, 2004, when Operating Permit No. 30-098 was in effect is via EPA Reference Method 9 observations by a certified observer, not via the use of COMS-measured data.[5]

C. OPACITY EXCEEDANCES OCCURRING LESS THAN 5% OF THE OPERATING TIME IN ANY ONE QUARTER, AND LESS THAN 3% OF THE OPERATING TIME IN TWO CONSECUTIVE QUARTERS ARE NOT TREATED AS VIOLATIONS.

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[4] WAQSR ch. 5 §2(i), *(i), (ii), (iii).* (emphasis added)

[5] The history of the Federal Regulations that are part of Operating Permit No. 30-098, make it clear that in establishing the NSPS emission standards for Portland cement plants, EPA did not intend COMS data to be used to document violations of opacity or particulate matter standards. Rather, EPA established the opacity and COMS requirements in 1988 as a monitoring tool to alert facilities "when repairs, maintenance, or changes in operation of emission control devices or other equipment are necessary," or when performance tests are necessary to determine if the source is in compliance with the standards. 53 Fed. Reg. 50355 (Dec. 14, 1988); *see also Nat'l Lime Ass'n v. EPA*, 627 F.2d 416, 450 (D.C. Cir. 1980) (according to EPA, COMS "data would not be used to determine compliance with the opacity standards but to keep a check on the operation and maintenance of the control equipment" and to trigger performance checks by trained observers.") And Operating Permit No. 30-098 requires the use of Reference Method 9 to determine compliance with the opacity and particulate matter standards, respectively.

In interpreting when violations exist under air permits it has issued, the WDEQ-AQD has followed, since 1999, a practice that opacity exceedances, as measured by a COMS occurring less than 5% of the operating time in any one quarter and less than 3% of the operating time in two consecutive quarters will not be treated as violations of the air permit (the "Safe Harbor"). Olson Aff. at ¶ 32.

As applied to the Mountain Cement Plant for the period December 23, 1999, through December 23, 2004 and including all exceedances (including those caused by start up, shut down or malfunction) the WDEQ-AQD would not treat as violations any opacity exceedances that occurred between December 23, 1999 to December 30, 1999, all of 2000, the first quarter of 2001, the last two quarters of 2002, all of 2003 and all of 2004. Keeler Aff. at ¶¶ 17, 18.

Additionally, if COMS data cannot be used to establish violations of the opacity limit under Operating Permit No. 30-098 that governed the plant between June 2, 1999 and March 14, 2004, then there were no violations during this time because there were no Method 9 observations. Sansing Aff. at ¶ 26. Beginning March 15, 2004, when the current operating permit became effective and COMS data could be used for compliance there have been no opacity exceedances above the Safe Harbor. Keeler Aff. at ¶¶ 18, 19; Sansing Aff. at ¶¶ 9, 15, 23, 24.

There is a strong technical basis, recognized by other Courts, for using the percentages adopted by the state of Wyoming in interpreting whether opacity exceedances, as measured by a COMS, and not Method 9, should be treated as violations.

"EPA Method 9" evaluates compliance based upon infrequent visual observation of the stack usually conducted beyond the fence line of the facility. Roberson Aff. at ¶¶ 39 – 42. Because of the numerous standards included in the method to ensure valid and repeatable results,

those observations can only be conducted a small fraction of the time that a plant operates. *Id.* Additionally, the amount of manpower required to drive to a source, to obtain permission for clearance to enter the facility, and to properly position the observer limits the frequency at which a Method 9 observation can be reasonably conducted. *Id.*

COMS has none of these limitations. This system uses an instrument that is placed in a stack and continually samples, every six minutes, what is exiting the stack and determines on average opacity for the period sampled. Roberson Aff. at ¶¶ 43 – 47.

Because of the greater testing frequency of COMS, as compared to Method 9, COMS will detect many more exceedances than Method 9. Roberson Aff. at ¶¶ 1 – 61, 71. This increased frequency results in an unintended consequence, namely a more stringent opacity standard. *Id.*

One way of avoiding this unintended effect is to provide a Safe Harbor of the type used by WDEQ-AQD. The enforcement thresholds used by WDEQ-AQD for COMS data would be a rational response to avoid unintentionally increasing the stringency of a permit. Alabama, North Carolina, Ohio and Tennessee have all adopted thresholds with respect to COMS data for this reason. Roberson Aff. at ¶¶ 62 – 70.

Recognition that an enforcement threshold is appropriate where COMS data is used has received judicial support. In *Sierra Club v. Tennessee Valley Auth.*,[6] plaintiff brought a citizen suit under the Clean Air Act alleging that COMS data established that opacity standards had been violated on 9,000 occasions. Like Wyoming, the Alabama agency applied a safe harbor, called a "2% *de minimis* policy" to COMS data. The agency did not deem a permittee to be in violation of the opacity standards as long as excess opacity did not exceed 2% of the source's

[6] *Sierra Club v. Tennessee Valley Authority*, Case No. CV-02-HS-2279-NW (N.D. Ala. Sept. 14, 2004). Memorandum Opinion attached as Ex. I.

operating hours for which the opacity standard is applicable (*i.e.*, excluding periods of startup, shutdown, and malfunction) and for which the COMS indicated valid data. *Id.* at 4. The court applied the state's safe harbor in dismissing the citizen suit, because the 9,000 exceedances represented less than 2% of the facility's total operation time.

In an analogous case in Tennessee, *National Parks Conservation Ass'n v. Tennessee Valley Auth.*, 175 F. Supp 2d 1071 (E.D. Tenn. 2001), plaintiffs also tried to use COMS data in a citizen suit to show exceedances of a 20% opacity standard. The Tennessee District Court dismissed the action, upholding the state's interpretation allowing a 2% exemption from the 20% opacity standard in the plants' operating permits, in part, by recognizing that a permit based on COMS data establishes a more restrictive standard than under Method 9. *Id.* at 1075.

The *TVA* case brought by the Sierra Club also addressed the issue of what deference should be accorded an agency practice that has not been formally adopted, such as WDEQ-AQD's Safe Harbor. The Alabama District Court had little difficulty concluding that a consistent practice shared with the regulated community regarding how a permit is enforced represents an interpretation of the permit that is entitled to deference. As the court opined "[u]nder these circumstances, TVA was reasonable in believing that [the agency's] practices in this instance were 'facially valid.'" *Id.* at 10, 12.

The same factual pattern in this case should lead to the same conclusion. Since adopting its Safe Harbor practice in 1999, the WDEQ-AQD has never deviated from it. Olson Aff. at ¶ 32. Additionally the agency has consistently represented to Mountain Cement that it is in compliance with the opacity standards if COMS data does not exceed the Safe Harbor. Sansing

Aff. at ¶¶ 12, 13, 14. The Court should defer to WDEQ-AQD's practice of not treating exceedances below the Safe Harbor as violations in resolving Biodiversity's claims.[7]

Finally, allowing Biodiversity to maintain an action for excess opacity events that are within the WDEQ-AQD's Safe Harbor would impermissibly intrude on WDEQ-AQD's enforcement discretion. The United States Court of Appeals for the Sixth Circuit succinctly described the proper role of citizen suits as follows:

> Congress has authorized citizen suits only when environmental officials "*fail* to exercise their enforcement responsibility" and has provided an "interstitial" role for private parties in enforcing the statute. *Gwaltney of Smithfield, Ltd v. Chesapeake Bay Found. Inc.*, 484 U.S. 49, 60-61 [citations omitted] (1987) (emphasis added); *see also Atlantic States Legal Found v. Eastman Kodak co.*, 933 F.2d 124, 127 (2d Cir 1991) ("The purpose of the citizen suit is to stop violations of the Clean Water Act that are not challenged by appropriate state and federal authorities."). The statute, however, does not permit citizen suits to seek types of relief "that the [government] chose to forgo"; otherwise, administrative "discretion to enforce the [statute]" in the public interest would be curtailed considerably" and the "nature of the citizens' role" would become "potentially intrusive." *Gwaltney*, 484 U.S. at 60-61, 108 S.Ct. 376.

Ellis v. Gallatin, 390 F.3d at 475 (emphasis in original) (in part, dismissing claims for violation of state's fugitive dust rule on grounds consent decree between EPA and defendant had res judicata effect and plaintiffs failed to comply with the notice provisions of the citizen suit provision).

Based on the WDEQ-AQD safe harbor, Mountain Cement is entitled to summary judgment on all of Biodiversity's opacity claims, if COMS data could not be used for compliance purposes between June 2, 1999 and March 14, 2004. Alternatively, using COMS data for the

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[7] That WDEQ-AQD does not consider exceedances below the Safe Harbor to be violations is established by both a failure to take any action against a source with opacity exceedances below the Safe Harbor and that the agency does not use exceedances below the Safe Harbor in calculating penalties for sources that exceed the Safe Harbor. Olson Aff. at ¶¶ 32, 37.

entire period December 23, 1999 to December 23, 2004, the Safe Harbor entitles Mountain Cement to summary judgment on all opacity claims except for the five quarters included in the lawsuit by the state against Mountain Cement.

D. IT IS UNDISPUTED THAT THE AMOUNT OF PARTICULATE MATTER THAT RELEASED FROM KILN 2 STACK SINCE 1999 HAS BEEN BELOW PERMIT LIMITS.

WDEQ-AQD does not use opacity data to determine whether the amount of particulate matter released from stacks at Mountain Cement's plant is in compliance with its air permits. Compliance with those limits is based on something called "Method 5" stack sampling." Olson Aff. at ¶ 34.

Since 1999, all of the Method 5 stack sampling conducted at the Mountain Cement plant for the Kiln 2 Stack, which is the only stack Biodiversity claims has violated limits on the release of particulate matter, have shown that releases of particulate matter from those stacks are in compliance with the permit. Sansing Aff. at ¶ 25. Given that the compliance method used by the state demonstrates no exceedances, Mountain Cement is entitled to summary judgment on all of Biodiversity's claims that limitations on the amount of particulate matter that can be released from Kiln 2 Stack have been exceeded.

E. ANY *VIOLATIONS* OF A MOUNTAIN CEMENT'S AIR PERMITS HAVE BEEN RESOLVED THROUGH A JUDICIAL ENFORCEMENT ACTION BROUGHT BY THE STATE OF WYOMING.

1. Background.

Based on a review of Mountain Cement's quarterly excess emission reports between December of 1999 and the present WDEQ-AQD believed that the plant exceeded the Safe Harbor limits in five quarters.[8] Olson Aff. at ¶¶ 31, 32, 33, 35, 36. Based on its practice, the state of Wyoming issued a notice of violation to Mountain Cement on September 3, 2002,

[8] In making that determination, WDEQ-AQD did not consider whether any of those exceedances were not subject to the opacity standards because they resulted from a start up, shut down or malfunction.

requesting that the company take action to address those exceedances. *Id.* After satisfactory compliance was achieved by Mountain Cement, the state of Wyoming on December 17, 2004, filed suit against Mountain Cement for civil penalties. *Id.*; Ex. G. An enforcement action was resolved in a consent decree dated March 21, 2005. *Id.*; Ex. H. Consistent with its Safe Harbor practice, WDEQ-AQD chose not to include in its lawsuit a request for penalties for exceedances below the Safe Harbor limit, nor did WDEQ-AQD include those exceedances in determining what it believed to be an appropriate penalty. *Id.* at ¶¶ 36, 37. In other words, WDEQ-AQD did not treat exceedances below the Safe Harbor limit as violations. Nevertheless, WDEQ-AQD believes that all the exceedances between 1999 and the date of the filing of its lawsuit requiring an enforcement action have been resolved. *Id.* at ¶ 38.

2. The WDEQ-AQD enforcement actions represent diligent prosecution barring Biodiversity's citizen suit for opacity exceedances.

a. The role of citizen suits

A court cannot hear a citizen suit if the government has commenced and is diligently prosecuting a civil action based on the same issues that are the subject of the proposed citizen suit. 42 U.S.C. § 7604(b)(1)(B) (2003). "The bar on citizen suits when a governmental enforcement action is under way suggests the citizen suit is meant to supplement rather than to supplant governmental action." *Gwaltney of Smithfield, Ltd. v. Chesapeake Bay Found., Inc.*, 484 U.S. 49, 60 (1987). As a consequence, when it appears that a governmental action begins and is diligently prosecuted, "the need for citizens' suits vanishes." *North & S. Rivers Watershed Ass'n v. Scituate,* 949 F.2d 552, 555 (1st Cir. 1991). Limitations on citizen suits "allow for smoother operation of ordinary enforcement mechanisms and encourage out-of-court settlements between agencies and polluters." *Friends of the Earth, Inc. v. Laidlaw Envtl. Servs. (TOC), Inc.*, 890 F. Supp. 470, 487 (D.S.C. 1995); *Connecticut Coastal Fishermen's Ass'n v.*

Remington Arms Co., 777 F. Supp. 173, 179, 186 (D. Conn 1991), *rev'd in part on other grounds*, 989 F.2d 1305 (2nd Cir. 1993).

Although citizen suits might be appropriate in situations where neither the EPA nor a state has taken any action, such suits are counter-productive where there is an ongoing action between the government and the alleged violation. In the latter circumstance, the government, as the party primarily responsible for enforcing the Act, must have the ability to resolve the claims in a manner it deems appropriate. This includes compromising and resolving claims by agreement. An alleged violator will be much less likely to enter into an agreement to resolve the government's claims if it knows that it could still be subject to a citizens' suit seeking to recover the same relief for the same alleged violations that the government agreed to forego as a part of the resolution of the government's enforcement action. *See Gwaltney of Smithfield, Ltd.*, 484 U.S. at 60-61 ("If citizens could file suit...in order to seek the civil penalties that the Administrator chose to forego, then the Administrator's discretion to enforce the act in the public interest would be curtailed considerably."); *Supporters to Oppose Pollution v. Heritage Group*, 973 F.2d 1320, 1324 (7th Cir. 1992). ("An administrator unable to make concessions is unable to obtain them. A private plaintiff waiting in the wings then is the captain of the litigation.").

In addition to avoiding interference with government objectives, the bar on citizen suits based on prior government prosecution protects defendants from being subjected "simultaneously to multiple suits." *Connecticut Fund for the Env't v. Contract Plating Co.*, 631 F. Supp. 1291, 1293 (D. Conn. 1986). It is also designed to alleviate the "obvious danger that unlimited public actions might disrupt the implementation of the Act and overburden the courts." *Friends of the Earth v. Consolidated Rail Corp.*, 768 F.2d 57, 63 (2nd Cir. 1985).

This bar against certain citizen suits does not leave private individuals without a voice in environmental issues. In fact, the Clean Air Act is very clear that private citizens may intervene as a matter of right in any government enforcement action instituted in federal court. 42 U.S.C. § 7604(b)(1)(B) (2003) (stating that "in any government action to enforce the Act] in a court of the United States, any person may intervene as a matter of right."). The state of Wyoming, likewise, has a provision that permits private citizens to intervene as a matter of right in any action initiated in state court. W.R.C.P. 24(b). If a private citizen feels compelled to complain about an issue that the government is already dealing with in an enforcement action, then the vehicle for making that complaint is intervention in the government enforcement action —not filing a separate action based on the same emissions standards and point source as the government action. Biodiversity has not suggested, let alone, offered any evidence, that it could not have intervened in the state lawsuit against Mountain Cement.

b. Standards to determine diligent prosecution.

The issue of diligent prosecution primarily involves two questions:

1. Did the state or federal government commence a judicial proceeding before the citizen suit was filed?

2. Was the state or federal government diligently prosecuting that action at the time the citizen suit was filed?

Connecticut Fund for the Env't., 631 F. Supp. at 1293.

The first question is easily answered in this case. On December 17, 2004, the State filed the suit against Mountain Cement addressing various issues associated with alleged emissions from the Plant. The state action was pending when Biodiversity filed its Complaint in this case on December 23, 2004.

As for the second question, in determining whether the government is diligently prosecuting an action, the "[d]iligence of the state's prosecution should be presumed." *Glazer v. American Ecology Envtl. Servs.*, 894 F. Supp. 1029, 1037 (E.D. Tex. 1995); *Arkansas Wildlife Fed'n v. ICI Amers., Inc.*, 842 F. Supp. 1140, 1147 (E.D. Ark. 1993); *Connecticut Fund for the Env't v. Contract Plating Co.*, 631 F. Supp. 1291, 1293 (D. Conn. 1986). As a general rule, this presumption is only overcome with "persuasive evidence that the state has engaged in a pattern of conduct in its prosecution of the defendant that could be considered dilatory, collusive, or otherwise in bad faith." *Connecticut Fund for the Env't*, 631 F. Supp. at 1293; *see also Glazer*, 894 F. Supp. at 1029; *Arkansas Wildlife Fed'n*, 842 F. Supp. at 1147.

Courts have found a lack of diligent prosecution primarily in situations where the state truly seemed to be "helping" the defendant, and the private citizens objecting to the defendant's alleged conduct did not have a reasonable opportunity to intervene in the state enforcement proceeding. *See, e.g., Atlantic States Legal Found. v. Universal Tool and Stamping Co.*, 735 F. Supp. 1404, 1416 (N.D. Ind. 1990) (finding that state's prosecution was not diligent because, among other things, counsel for the defendant "walked through" the interlocutory consent decree for approval in the offices of the state agency in a single day, which was highly unusual because the approval and signing of such decrees usually required four to six weeks); *Sierra Club v. SCM Corp.*, 572 F. Supp. 828, 830-31 (W.D.N.Y. 1993) (allowing citizens' suit to proceed because plaintiffs, as members of the public, lacked the opportunity to be heard on the merits of a proposed consent order in previous enforcement proceedings).

It is well settled that the diligence of the government prosecution is not held to the standards that the private plaintiff attempting to file a citizens' suit would impose. *See Gwaltney of Smithfield, Ltd.*, 484 U.S. at 60-61 (stating that citizens should not be permitted to seek

penalties that the government chose to forego); *Supporters to Oppose Pollution*, 973 F.2d at 1324 (stating that a private plaintiff should not be "captain of the litigation" by having the ability to file a separate lawsuit to recover relief that the government chose to forego). Moreover, "a federal court ought not to allow a citizens' suit to proceed merely because a prior pending state suit has not alleged as many separate violations of the Act as has the citizens' suit and therefore seeks to impose a less substantial civil penalty on the defendant." *Connecticut Fund for the Env't*, 631 F. Supp. at 1293. "Merely because the state may not be taking the precise action [the private plaintiff] wants it to or moving with the alacrity [that plaintiff] desires does not entitle [the private plaintiff] to injunctive relief." *Supporters to Oppose Pollution,* 973 F.2d at 1320, 1324 (quoting *North & S. Rivers Watershed Ass'n v. Scituate*, 949 F.2d 552, 555-56 (1st Cir. 1991)).

c. The State's diligent prosecution in this case.

In this case, Biodiversity has no evidence to overcome the strong presumption in favor of the State's diligent prosecution. Biodiversity has the burden to prove that the State was not diligently prosecuting the claims against Mountain Cement when this lawsuit was filed. 42 U.S.C. § 7601(b)(1)(B)(2003); *Connecticut Fund for the Env't*, 631 F. Supp. at 1293. There is no evidence, however, that the State acted in a manner that could be considered "dilatory, collusive, or otherwise in bad faith." The fact that the State may not have asserted as many alleged violations as Biodiversity seeks to assert in this action does not constitute such evidence. *Gwaltney of Smithfield, Inc.*, 484 U.S. at 60-61; *see also Ellis v. Gallatin Steel Co.*, 290 F. 3d 461, 477 (6th Cir. 2004) (recognizing that citizens may bring an action where the EPA has failed to do so, "not where the EPA has acted but has not acted aggressively enough in the citizens' view"). In fact "the mere inclusion of additional dates of an alleged violation does not suffice to

grant jurisdiction" over a citizen suit. *Glazer,* 894 F. Supp. at 1035. In other words, Biodiversity cannot maintain its complaint related to alleged opacity violations at Kiln 2 Stack for *any* time period before the State suit was filed, even if the time period is different from the time period that was the subject of that Action. *Maryland Waste Coalition,* 616 F. Supp. at 1483-84.

The summary judgment evidence in this case establishes diligent prosecution. WDEQ-AQD consistently reviewed Mountain Cement's quarterly excess emission reports. Olson Aff. ¶ 31. When it identified exceedances outside its Safe Harbor it required Mountain Cement to make changes to achieve acceptable compliance. *Id.* at 32, 33, 35. It sought an appropriate penalty from Mountain Cement. Ex. G & H. As evidence of the success of the state's enforcement activities, the number of opacity exceedances has dropped steadily since the Notice of Violation was issued September 3, 2002. Keller Aff. at ¶ 15.

At the very least, all of Biodiversity's claims related to opacity standards should be dismissed pursuant to 42 U.S.C. § 7604(b)(1)(B)(2003). In the alternative, there would exist a dispute about the WDEQ-AQD's diligent prosecution requiring denial of Biodiversity's Motion for Summary Judgment.

3. The entry of the consent decree is res judicata of the claim in Biodiversity's citizen suit.

a. The Clean Air Act Does Not Preclude a *Res Judicata* Defense

"Under *res judicata*, or claim preclusion, a final judgment on the merits of an action precludes the parties or their privies from relitigating issues that were or could have been raised in the prior action." *Northern Natural Gas v. Grounds*, 931 F.2d 678, 681 (10th Cir. 1991). The purpose of *res judicata* is to relieve parties of "the cost and vexation of multiple lawsuits,

preserve judicial resources, prevent inconsistent decisions, and encourage reliance on adjudication." *Satsky v. Paramount Commcns, Inc.*, 7 F.3d 1464, 1467 (10th Cir. 1993).

There is nothing in the Clean Air Act to suggest that it somehow supplants or preempts the doctrine of *res judicata*. In fact, there are numerous cases in which courts have considered a defense of *res judicata* in citizen suits under the Clean Water Act and the Resource Conservation and Recovery Act. *See, e.g., The Old Timer, Inc. v. Blackhawk-Central City Sanitation Dist.*, 51 F. Supp. 2d 1109, 1117 (D. Colo. 1999) (Clean Water Act); *Davis v. Sun Oil Co.*, 953 F. Supp. 890, 894 (S.D. Ohio 1996) (Resource Conservation and Recovery Act). *Cf. Satsky*, 7 F.3d at 1467 (private property claims based on hazardous waste releases that had been the subject of an earlier government enforcement claim); *United States v. ITT Rayonier, Inc.*, 627 F.2d 996, 1002 (9th Cir. 1980) (recognizing that the Federal Water Pollution Control Act did not abrogate *res judicata*).

b. *Res Judicata,* As Distinguished From Diligent Prosecution

Res judicata is not the same as the diligent prosecution requirement under the Clean Air Act. The diligent prosecution defense comes into play immediately upon the filing of a government enforcement action. *See* 42 U.S.C. § 7402(b)(1)(B)(2003)(tying diligent prosecution to the time the citizen suit is "commenced"). If the government action is filed *after* the citizen suit, then there is no diligent prosecution defense. *The Old Timer, Inc.*, 51 F. Supp 2d at 1115 (discussing the analogous diligent prosecution provision in the Clean Water Act). If, on the other hand, the government files its action *before* the citizen suit, then the defense is available and the court in the citizen suit must determine whether the government is diligently prosecuting its claims *at the time of the citizen suit filing. Connecticut Fund for the Env't*, 631 F. Supp. at 1293. Theoretically, at least, anything that happens in the government enforcement action *after*

the citizen suit has been filed is irrelevant. A citizen plaintiff does not and should not have a right to maintain a parallel action while the government action is proceeding on the chance that the government will stop diligently prosecuting its action. As long as there is diligent prosecution of an existing government action at the time the citizen suit is filed, the citizen suit should be dismissed.

Res judicata, on the other hand, becomes applicable only when the previous government enforcement action is concluded. *See Northern Natural Gas*, 931 F.2d at 681 (stating that *res judicata* applies to final judgment). Prior to that time, a defendant in a citizen suit may have a "diligent prosecution" defense, but no defense based on *res judicata*. Sometimes, the government enforcement action is filed *after* the citizen suit, but concluded *before* the citizen suit is concluded. In those situations, there is no "diligent prosecution" defense, but the citizen suit claims may nevertheless be barred by *res judicata*.

c. The Consent Decree Entered Against Mountain Cement on March 21, 2005 Is A Final Judgment

Courts have recognized that consent decrees are given the same effect as any other judgments. *International Union of Operating Engineers-Employers Constr. Indus. Pension, Welfare & Training Trust Funds v. Karr*, 994 F.2d 1426, 1429 (9th Cir. 1993); *Markstein v. Countryside I, L.L.C.*, 77 P.3d 389, 397 (Wyo. 2003). "A consent decree . . . is an agreement that the parties desire and expect will be reflected in and be enforceable as a judicial decree that is subject to the rules generally applicable to other judgments and other decrees." *Rufo v. Inmates of the Suffolk County Jail*, 502 U.S. 367, 378 (1992).

d. The Elements of *Res Judicata* Are Satisfied As to All Claims In this Case

State judicial proceedings are entitled to the same preclusive effect in federal court as they would receive in the judgment-rendering state. 28 U.S.C. § 1738 (2003); *Marrese v.*

American Acad. of Orthopaedic Surgeons, 47 U.S. 373, 384 (1985). As a consequence, this Court must look to Wyoming law to determine the conclusive effect of the Consent Decree. *See Harmon Indus. v. Browner,* 191 F.3d 894, 902 (8th Cir. 1999); *Gargallo v. Merrill Lynch Pierce Fenner & Smith, Inc.*, 918 F.2d 658, 663 (6th Cir. 1990).

Under Wyoming law, *res judicata* applies if the following factors are present: "(1) identity in parties; (2) identity in subject matter; (3) the issues are the same and relate to the subject matter; and (4) the capacities of the persons are identical in reference to both the subject matter and the issues between them." *Elkund v. PRI Envtl., Inc.*, 25 P.3d 511, 517 (Wyo. 2001). The Decree in this case satisfies all of these factors and therefore precludes Biodiversity's claims in this case.

e. Identity of Parties and Identity in Capacity

Res judicata is applicable only to parties to the first suit or their privies. *Lowell Staats Mining Co. v. Philadelphia Elec. Co.*, 877 F.2d 1271, 1280 (10th Cir. 1989). "The parties in fact need not be identical but rather in privy with the original parties."; *Stoneking v. Wheatland Rural Elec. Ass'n,* 72 P.3d 272, 275 (Wyo. 2003). Mountain Cement was a party to the earlier State Action, but Biodiversity was not directly involved as a party. Nevertheless, the doctrine of *res judicata* applies if the State was in privity with Biodiversity.

It is well settled that a state and its private citizens are in privity when the state, acting as *parens patriae*, brings an action for damage to a public resource. *Satsky*, 7 F.3d at 1469-70; *see also City of Tacoma v. Taxpayers of Tacoma*, 357 U.S. 320, 340-41 (1958) (stating that a "final judgment . . . was effective, not only against the State, but also against its citizens, including the taxpayers of Tacoma, for they, in their common public rights as citizens of the State, were represented by the State"); *United States Envtl. Prot. Agency v. City of Green Forest*, 921 F.2d

1394, 1403-04 (8th Cir. 1990) (holding that a citizen suit was barred by *res judicata* when, after the citizen suit was filed, the EPA entered into a consent decree with the alleged violator involving the same claims).

The State lawsuit involved claims related to alleged violations of permit limits for emissions to the atmosphere, which involves a public resource. Ex. G; Olson Aff. at ¶ 35. In this lawsuit, Biodiversity is attempting to effectively stand in the shoes of state and federal enforcement authorities and bring the same types of public claims that were at issue in that action. This lawsuit does not involve claims seeking damages for private injuries peculiar to individual citizens. Instead, it seeks enforcement of public rights, civil penalties paid to the State and injunctive relief. As a consequence, Biodiversity is in privity with the State. *See The Old Timer, Inc. v. Blackhawk-Central City Sanitation Dist.*, 51 F. Supp. 2d 1109, 1118 (D. Colo. 1999) (holding that citizen's claims to recover civil penalties for alleged pollution were barred by earlier order in state enforcement action).

f. Identity in Subject Matter and Issues

Res judicata also requires a relationship between the claims made in the present lawsuit and the claims adjudicated in the earlier lawsuit. *Stoneking,* 72 P.3d at 275. Obviously, there must be a relationship between the two sets of claims, but the claims themselves do not necessarily have to be exactly the same. *Res judicata* covers not only issues that were actually adjudicated in the earlier action, but also issues that *could have been* raised. *Cermak v. Great West Cas. Co.*, 2 P.3d 1047, 1054 (Wyo. 2000).

Under Wyoming law, *res judicata* "has the effect of foreclosing any litigation of matters that never have been litigated because of a determination that they should have been advanced in an earlier suit." *Id.* at 1053. As long as there was a full and fair *opportunity* to litigate an issue

in the first lawsuit, the doctrine of *res judicata* applies. *Bender v. Uinta County Assessor,* 14 P.3d 906, 910 (Wyo. 2000). WDEQ-AQD could have included in the state lawsuit all of the opacity exceedance claims Biodiversity asserts. WDEQ-AQD consciously chose not to mention all those claims because it did not consider them to be violations. Olson Aff. at ¶ 36. Essentially, the WDEQ-AQD is saying that to include exceedances that it does not consider as violations would be inconsistent with its practice. As Olson notes, however, WDEQ-AQD did view the state court action as resolving all exceedances requiring an enforcement action. Olson Aff. at ¶ 38. In other words, the WDEQ-AQD in its lawsuit resolved all opacity exceedance claims because WDEQ-AQD brought all the claims it believed existed at the time of filing and it intended to resolve all the claims that existed.

The claims of Biodiversity in this lawsuit should be barred by *res judicata*. *See DLB v. DJB (Paternity of JRW)* 814 P.2d 1256, 1264 (Wyo. 1991) (recognizing that *res judicata* furthers the state interest in having disputes conclusively resolved in a single action and minimizes the difficulties and exposure of piecemeal litigation).

IV.

CONCLUSION

Based on the foregoing, Mountain Cement is entitled to a summary judgment in its favor dismissing all or part of Biodiversity's complaint or, in the alternative, denial of Biodiversity's Partial Motion for Summary Judgment.

DATED this 29th day of July, 2005.

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CERTIFICATE OF SERVICE

I, Jason M. Tangeman, certify that a copy of the above and foregoing pleading was served on Plaintiffs by hand delivery and by placing a copy of the same in the U.S. Mail, postage prepaid and addressed as follows on July 29th, 2005:

Reed Zars
Attorney at Law
910 Kearney Street
Laramie, WY 82070

Jason M. Tangeman

EXHIBIT LIST

Exhibit A: **Affidavit of Dan Olson**

Exhibit B: **Affidavit of Ralph R. Roberson**

Exhibit C: **Affidavit of William Sansing**

Exhibit D: **Affidavit of Thomas R. Keeler**

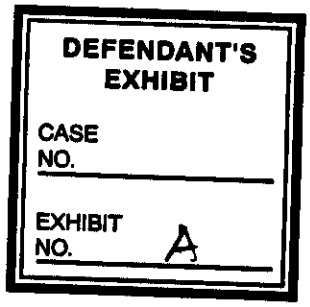
Exhibit E: **Operating Permit No. 30-098**

Exhibit F: **Operating Permit No. 31-098**

Exhibit G: **Complaint filed in the State Action**

Exhibit H: **Consent Decree entered in the State Action**

Exhibit I: **Opinion in *Sierra Club v. Tennessee Valley Auth.*, No. CV-02-HS-2279-NW, 2004 U.S. Dist. Lexis 28080 (N.D. Ala. Sept. 14, 2004)**



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Attorneys for Defendant Mountain Cement Company

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF WYOMING

Biodiversity Conservation Alliance and Sierra Club,	)	
Plaintiffs,	)	Case No. 04CV 361-B
v.	)	
Mountain Cement Company,	)	
Defendant.	)	

AFFIDAVIT OF WILLIAM SANSING, Ph.D.

STATE OF WYOMING)
)ss.
COUNTY OF ALBANY)

William Sansing, being first duly sworn, deposes as says as follows:

1. I am over the age of 21 and fully competent to make this affidavit.

2. The facts and matters stated herein are within my personal knowledge, and are true and correct.

3. I received a Bachelor of Sciences, Masters and Doctorate degrees in radiological sciences from the University of Oklahoma.

4. Beginning in approximately 1981, I was employed by a cement plant eventually owned and operated by a Company called Holcim. The Holcim cement plant was located near Ft. Collins, Colorado.

5. At Holcim I was the environmental manager for approximately 17 years. For the other 3 years I was a process engineer and also involved in maintaining product quality control.

6. For the past 3 ½ years I have been, and remain, the environmental manager at Mountain Cement Company ("MCC") located in Laramie, Wyoming. MCC operates a Portland cement manufacturing plant.

7. As environmental manager at MCC I am primarily responsible for supervising the cement plant's compliance with State and federal laws, regulations, and/or permits.

8. From June 2, 1999, through March 14, 2004, the MCC plant was subject to Wyoming Air Quality Operating Permit No. 30-098.

9. From March 15, 2004, to present, the MCC plant has been subject to Wyoming Air Quality Operating Permit No. 31-098.

10. The Operating Permits limit the opacity of stack gases from the Kiln 1 and Kiln 2 to 20% opacity, and limit the opacity of stack gases from the clinker coolers to 10% opacity.

11. In accordance with these Operating Permits, MCC continuously measures the opacity of stack gases from Kiln 1, Kiln 2 and the from the clinker coolers using continuous opacity monitoring systems (COMS).

12. It is my understanding based on advice from Glen Spangler of WDEQ-AQD, that the opacity limits in MCC's Operating Permits applicable to Kiln 1, Kiln 2, and the clinker coolers do not apply during periods of start up, shut down, and malfunction events that are reported to the agency on a quarterly basis.

13. It is also my understanding based on advice from Glen Spangler and Dan Olsen of WDEQ-AQD, that the WDEQ-AQD considers MCC and other sources that continuously monitor opacity to be in compliance with permit limits as long as the periods of excess opacity do not exceed 5% of a units' operating time in a single month; or, 3% of the operating time in two consecutive months. Stated another way, it is my understanding that the WDEQ-AQD considers MCC to be in compliance with the opacity limits in the Operating Permits if COMS-measured data demonstrates that each unit facility operates in compliance with the applicable opacity limit for at least 95% of the unit's operating hours.

14. It is my understanding based on advice from Glen Spangler and Dan Olsen of WDEQ-AQD, that this 5% or 3% excess emission threshold is an allowable limit and that the State of Wyoming will not issue a Notice of Violation, nor seek financial penalties, or ask for injunctive relief for such reported exceedances that do not exceed this threshold. Attachment 1 is a copy of a December 18, 2002 letter from MCC to Glenn Spangler of WDEQ-AQD describing the corrective actions MCC took to abate the excess opacity at Kiln 2, and stating, "*Since starting up from this outage, Kiln 2 opacity has remained well below the 5% quarterly allowable limit* as reported in the last two excess opacity reports submitted to the DEQ, and continues to perform in this fashion as of this writing."

15. Between December 23, 1999, and the present, Kiln 2 at the MCC plant exceeded these enforcement thresholds in five quarters. In response, the WDEQ-AQD issued a Notice of Violation, required corrective action, and filed suit against MCC for penalties.

16. As environmental manager at MCC I have many duties, including reviewing daily emissions reports from Kiln No. 1, Kiln No. 2 and the clinker coolers. These emissions reports include COMS-measured opacity data for these sources. I am responsible for monitoring compliance with opacity limits for Kiln 2 and clinker cooler and for preparing quarterly excess emission reports and submitting those reports to the WDEQ-AQD. I also perform a routine walk through of the plant looking for any visible emissions.

17. The COMS records opacity each fifteen seconds. The COMS averages the recorded opacity over a six minute period. This opacity data is continuously recorded while the plant is in operation.

18. I record daily emission and opacity reports as well as any exceedences which might appears in those reports.

19. As it relates to kiln opacity, an "exceedence" is an opacity measurement in excess of 20% opacity as discussed above. With respect to the clinker coolers, an "exceedance" is an opacity measurement in excess of the 10% standard discussed above.

20. I record any and all daily kiln opacity "exceedences" on the MCC computer in my office, and compile and submit the excess opacity data to the WDEQ-AQD on a quarterly basis. I include in the quarterly reports every period of excess opacity recorded by a COMS.

21. If there is a recorded period of excess opacity it is included in the daily report. I review the report each day and go to the control room to determine the cause of the exceedence. I can determine the cause of an exceedence because at the time an exceedence occurs, the control room operators contemporaneously fill out a form to identify the nature and cause of the exceedence. The control room operators also describe on the form the corrective action(s) taken in response to the exceedence. I developed this current form with the assistance of the control room operators who provided the list of the causes and corrective actions. The form is regularly subject to revisions when there is a new event that causes excess emissions and when new corrective actions are undertaken. .

22. All COMs-recorded periods of excess emissions listed on the form described above are included in my quarterly reports to the Wyoming Department of Environmental Quality.

23. I have reviewed MCC's quarterly reports for the clinker coolers pertaining to emissions from 4th Quarter in 1999 through the 4th Quarter of 2004 and confirmed the accuracy of the attached spreadsheet that summarizes the excess opacity events associated with the clinker coolers during that review period. See Attachment 2.

24. As shown in Attachment 2, there was no quarter during that five year period where excess opacity from the clinker coolers exceeded 5% of the unit's operating time. In fact, during the entire 5 year period there were excess opacity for only 0.66 percent of the operating time. Further, when you exclude excess opacity during startup, shutdown, and malfunction events, there were only 5.2 hours (or 52-six-minute periods)

of excess opacity during the period from the 4th quarter of 1999 through the 4th quarter of 2004, representing 0.01% of the units operating time..

25. MCC performs annual Method 5 stack tests on Kiln 2 to determine compliance with the particulate matter standards in MCC's Operating Permits. I have reviewed the Method 5 stack test performed on Kiln 2 from 1999 to the present. Every valid Method 5 stack test has demonstrated compliance of Kiln 2 with the particulate matter limits in MCC's Operating Permits.

26. There is no Method 9 opacity reading on Kiln 2 or the clinker coolers that demonstrates a violation of the relevant opacity limits in Operating Permit No. 30-098.

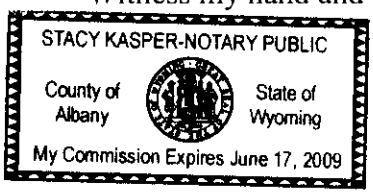
27. It is my understanding based on advice from Glen Spangler of WDEQ-AQD, that in order to claim that excess opacity that occurs during a startup, shutdown or malfunction event is exempt from permit limits, all I have to do is to identify on the quarterly excess opacity reports each period of excess emission that occurred during startups, shutdowns and malfunctions, the nature and cause of the malfunction, and the corrective action taken, as required by the recordkeeping requirements Facility-Specific Permit Conditions in the Operating Permits applicable to Kiln 2 and the clinker coolers.

William Sansing

STATE OF WYOMING)
)
COUNTY OF ALBANY)

Subscribed and sworn before me by William Sansing on this 27th day of July, 2005.

Witness my hand and official seal.



Notary Public

My commission expires: _____

ATTACHMENT 1

Letter from Mountain Cement Company to Glenn Spangler, WDEQ-AQD December 18, 2002

(6)
MCC, Laramie Cement Plant Comp file —

MOUNTAIN CEMENT COMPANY
5 Sand Creek Rd.
Laramie, Wyoming 82070
(307) 745-4879

December 18, 2002

Mr. Glenn Spangler
WDEQ-AQD
Herschler Building
122 West 25th Street
Cheyenne, WY 82002

Dear Mr. Spangler:

To best respond to your inquiry to item 4., **Corrective Action,** in the letter to Mountain Cement Company dated September 10, 2002; a review of the chronology of ESP maintenance and repairs would be useful. As was explained in a letter to Mr. Glenn Spangler dated August 16, 2002, the genius of the recent ESP performance issues began in December of 1999, during an annual kiln major maintenance outage, when a precipitator specialty company, John Stritikus Consulting based in Salt Lake City, was contracted to perform a major overhaul of the control device. The main thrust of the work was to improve upon past ESP performance by enhancing the precipitator's collection efficiency. This was to be accomplished in 4 of the 6 ESP fields (A/B, C, and D fields, west plus C field, east) by two primary means; optimizing the alignment between the electrical ground and the high voltage electrodes (commonly referred to as the collection plates and wires, respectively), and by improving the device's ability to clean collected material from these plates and wires thus enabling them to function continuously at the unit's optimum voltage. To achieve alignment optimization, the device's "shock bars", used to maintain optimal clearance between the collection plates and wires, and used to distribute the impact from the unit's rappers to the collection plates for cleaning, were to be replaced with new ones. However, during the replacement process it was discovered that the contractor bowed the new shock bar as they were brought into the ESP. In an effort to rectify this error, the contractor fabricated and installed an alignment rig intended to force and hold the shock bars in proper alignment. Upon kiln startup, it was immediately discovered that not only was this arrangement ineffective at maintaining sufficient clearances between the collection plates and wires, but that it also had the negative effect of partially reducing the effectiveness of the cleaning rappers. At this point, a second precipitator consulting company, TRK from Carlisle, MA, was immediately employed to troubleshoot the problem. Over the following two-week period, the TRK representative selectively removed the wires visually observed having inadequate clearances from the collection plates in all 4 modified fields until the ESP was able to operate below the 20% opacity limit under normal operating conditions. This major ESP maintenance effort and subsequent emergency, temporary fix cost approximately $220,000 as shown in Table 1 below.

Table 1: Kiln 2 ESP Repair History Summary by Year

Expenses by Category	1996	1997	1998	1999	2000	2001	2002
Contract Repair Work	$0	$55,100	$27,804	$154,836	$115,500	$134,470	$120,217
Repair Parts, Direct Charge	$35	$770	$45,566	$34,559	$2,536	$11,244	$16,883
Repair Parts from Inventory	$1,364	$4,635	$0	$31,101	$6,027	$5,291	$15,547
Total Expenditures	$1,399	$60,505	$73,170	$220,496	$124,063	$151,005	$152,647

Recognizing that the emergency fix at the direction of TRK was not a long-term solution, TRK was again brought into the plant in March of 2000 to re-inspect the ESP and develop a comprehensive repair plan with a schedule for implementation. In August of 2000, kiln 2 was again brought down for major maintenance where upon a different maintenance contractor specializing in precipitators, Whitehead Construction based in Elizabeth, TN, was employed to begin the predetermined rework under the direct supervision of a TRK representative. During this outage, the bulk of the rework encompassed removing the marginally effective alignment rig and replacing the bowed shock bars in C field, west. The balance of the work centered on realigning the collection plates to the wires in the remaining affected fields as best as possible, given the limitations of the remaining bowed shock bars with their alignment rigs. This first step in the overall repair plan was quite successful as demonstrated in the quarterly excess opacity reports that followed. As shown in Table 1, this work in 1999 cost approximately $124,000 in repair parts and contractors services.

The next phase of the ESP repair plan, scheduled to occur in June of 2001, was to re-work C field, east in the same fashion as C field, west plus other routine repairs as needed. Both Whitehead Construction and TRK were scheduled to perform the work because of the quality of workmanship provided during the previous ESP repairs. However, unrelated kiln problems forced an early kiln shutdown in May and Whitehead Construction was unable to do the work because of a prior commitment. Likewise, TRK could not supply a consultant until late in the outage. As a result, a nationally known company, Bag House Accessories (BHA) from Kansas City, MO, was brought in to perform the repairs. In all, approximately $151,000 was expensed for this work as can be seen in Table 1. To our dismay, a series of ESP mechanical breakdowns, particularly in C field, east began to randomly occur soon after startup and, in spite of our continuous efforts and corrections, continued until the next major outage in April of 2002. It was later determined that the breakdowns were the result of poor workmanship by BHA personnel and substandard welding performed previously by Stritikus Consulting. These unpredictable, random failures included multiple occurrences of the following:

- Retaining welds on ESP inlet baffle plates (used to evenly distribution the incoming gas stream) broke, causing the plates to fall into the ESP hoppers.
- The bolts used to attach C field, east collection plates to the new shock bars were found to be a quarter inch too long, thus protruding through the shock bars and short-circuiting collection voltage.
- Many of the shock bars installed in C, field east, were improperly designed, allowing the collection plates to swing in the gas stream, thus reducing collection efficiency.
- Throughout the ESP, shock bar striker plates, used to distribute the mechanical cleaning force to the collection plates, fell off from poor welds.
- Many striker plate anvils throughout the ESP were installed incorrectly resulting in poor cleaning.
- Bad welding resulted in incorrect positioning of the stop angles, impairing rapper hammer impact and creating close clearances between collecting plate baffle and wires.
- Many of the welds throughout the ESP were left with jagged edges, thus providing points for electrical arcing, reducing collection efficiency.

- All of the anti-sneak baffle at the partition wall between the east and west halves of the ESP were improperly installed, thus obstructing normal plate expansion.
- Various plate-stabilizing clips were improperly installed, allowing the collection plates to swing in the gas stream, thus reducing collection efficiency.
- Replacement electrode wires installed were of the wrong design, leading to premature failure and electrical short-circuiting.

Records indicate that during the following four-quarter period the ESP was inspected and repaired on 48 separate occasions (see Table 2) in an ongoing effort to assure compliance with opacity limits. Often, after each emergency repair, MCC was confident that the ESP would then at least perform to minimum requirements. But, because of the shear number of the deficiencies, the difficulty in identifying many of them in advance, and the continual randomness of their manifestation, the repairs often proved to be only temporary improvements, subject to the next random breakdown.

Table 2: Emergency ESP Repair Days as Indicated From Production Records

	Reporting Quarters in Question			
	2nd Qtr 2001	3rd Qtr. 2001	4th Qtr. 2001	1st Qtr. 2002
ESP Maint. Days	April, 02	July, 06	Oct., 11	Jan., 01
	April, 07	July, 24	Oct., 12	Jan., 17
	April, 23	Aug., 01	Oct., 17	Jan., 24
	May, 06	Aug., 23	Oct., 23	Jan., 28
	May, 18	Aug., 31	Nov., 01	Feb., 12
	May, 23	Sept., 06	Nov., 06	Feb., 20
	May. 30	Sept., 07	Nov., 23	Feb., 20
	June, 01	Sept., 14	Dec., 05	Mar., 07
	June, 14	Sept., 15	Dec., 15	Mar., 13
	June, 19	Sept., 16	Dec., 21	Mar., 22
	June, 22	Sept., 19	Dec., 22	Mar., 25
	June, 30	Sept., 28	Dec., 24	---
	---	Sept., 29	---	---
Total Days	12	13	12	11

Total All 4 Quarters = 48 Days

In April of 2002, kiln 2 was once again taken down for its annual major outage at which time, Whitehead Construction and TRK were contracted to repair the remaining damage from the previous shutdowns. The bulk of the work performed at this time included:

- All the missing gas distribution plates in the inlet nozzle were replaced, re-establishing proper gas distribution throughout the ESP.
- The remaining oversized bolts in C field, east that had not been ground down were replaced when the remaining improperly designed shock bars (several had been replaced during the previous year) were replaced.
- The improperly installed plate stabilizing clips were replaced with alignment tabs to prevent the plates from swinging in the gas stream.
- All poorly welded shock bar striker plates were rewelded.
- The remaining sharp edges from various weldments throughout the ESP were ground off.

- The wires and plates of all remaining fields were realigned.
- All striker plate anvils were properly reinstalled.
- Stop angles were removed and welded in the proper positions.
- The alignment rig and bowed shock bars in A/B fields, west were removed and new shock bars were installed.

Since starting up from this outage, kiln 2 opacity has remained well below the 5% quarterly allowable limit as reported in the last two excess opacity reports submitted to the DEQ, and continues to perform in this fashion as of this writing.

It's worth noting that in the three years prior to the December 1999 outage, MCC spent an average of $45,000 per year on ESP maintenance and managed to keep the percent of quarterly opacity exceedences under the 5% limit. It was only after spending over $200,000 in 1999 in our wholly voluntary effort to further reduce kiln 2 opacity readings did compliance issues begin. Since that time, another $428,000 has been spent to correct the ESP deficiencies resulting from the poor workmanship documented above. It is MCC's intention to spend an additional $100,000 on ESP rework during the next major kiln outage, presently scheduled in April of 2003, to finish the performance improvement project began in December of 1999.

If you need further clarification, please do not hesitate to call me.

Sincerely,

Bruce Ballinger
President
Mountain Cement Company

ATTACHMENT 2

Excess Opacity
Mountain Cement Clinker Coolers
Fourth Quarter 1999 through Fourth Quarter 2004

Mountain Cement Company
Reported Excess Opacity
Clinker Coolers

	Operating Time, hours	CMS Down Time, hours	Startup, Shutdown, and Malfunction (SSM) hours	Other* hours	Excess Opacity, Total hours	Excess Emissions % of Operating Time	Total Excess Opacity Excluding SSM, hours	Excess Emissions % of Operating Time Excluding SSM
Q4 - 1999	2130.75	88.90	3.50	1.20	4.70	0.23	1.20	0.06
Q1 - 2000	2084.00	30.00	0.00	0.00	0.00	0.00	0.00	0.00
Q2 - 2000	2146.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Q3 - 2000	2200.00	6.00	0.00	0.00	0.00	0.00	0.00	0.00
Q4 - 2000	2166.00	5.60	55.40	0.00	55.40	2.56	0.00	0.00
Q1 - 2001	2018.00	76.30	62.10	0.00	62.10	3.20	0.00	0.00
Q2 - 2001	2111.60	0.00	14.80	0.00	14.80	0.70	0.00	0.00
Q3 - 2001	2160.45	0.00	9.70	0.00	9.70	0.45	0.00	0.00
Q4 - 2001	2049.85	141.60	69.40	0.10	69.50	3.64	0.10	0.01
Q1 - 2002	2092.50	220.00	24.10	0.30	24.40	1.30	0.30	0.02
Q2 - 2002	1867.90	1.20	3.30	0.30	3.60	0.19	0.30	0.02
Q3 - 2002	2116.99	2.70	13.40	0.40	13.80	0.65	0.40	0.02
Q4 - 2002	2189.00	30.80	25.90	1.50	27.40	1.27	1.50	0.07
Q1 - 2003	2136.00	73.40	9.50	0.00	9.50	0.46	0.00	0.00
Q2 - 2003								
1	1920.85	12.20	0.00	0.00	0.00	0.00	0.00	0.00
2	1844.30	5.80	1.90	0.00	1.90	0.10	0.00	0.00
Q3 - 2003								
1	1920.85	24.30	0.10	0.10	0.20	0.01	0.10	0.01
2	2138.65	8.60	0.20	0.00	0.20	0.01	0.00	0.00
Q4 - 2003								
1	2076.75	33.30	0.00	0.00	0.00	0.00	0.00	0.00
2	2025.75	0.50	0.10	0.00	0.10	0.00	0.00	0.00
Q1 - 2004								
1	2098.10	76.90	4.50	0.20	4.70	0.23	0.20	0.01
2	2023.00	0.30	6.70	0.10	6.80	0.34	0.10	0.00
Q2 - 2004								
1	1899.60	35.40	0.40	0.10	0.50	0.03	0.10	0.01
2	2012.70	4.60	4.40	0.10	4.50	0.22	0.10	0.00
Q3 - 2004								
1	2131.70	4.30	0.30	0.00	0.30	0.01	0.00	0.00
2	2169.70	87.40	30.80	0.80	31.60	1.52	0.80	0.04
Q4 - 2004								
1	2028.55	0.70	1.00	0.40	1.40	0.07	0.40	0.02
2	2167.25	77.00	0.30	0.10	0.40	0.02	0.10	0.00
TOTAL	**53730.99**	**970.10**	**340.50**	**5.20**	**345.70**	**0.66**	**5.20**	**0.01**

*Refer to "Explanation of Cause Codes" for itemized description of startup/shutdown/malfuction/other events.

Explanation of Cause Codes

Form B, Excess Opacity Report for Third Quarter 2003

1	Kiln start up	Start Up
2	Kiln shut down	Shut Down
3	Raw mill start up	Start Up
4	Raw mill shut down	Shut Down
5	Opacity increased while starting up auxiliary equipment	Start Up
6	Erratic feed rate	Malfunction
7	Erratic fuel rate	Malfunction
8	Plugged system	Malfunction
9	Broken dust collector bag(s)	Malfunction
10	Electrical malfunction in precipitator	Malfunction
11	Mechanical malfunction in precipitator	Malfunction
12	Lost auxiliary equipment	Shut Down
13	Lost spray tower exit temperature control	Malfunction
14	Working in/on process system	Non-violation
15	Working in/on Pollution Control Equipment	Non-violation
16	Fan output began ramping up or down	Malfunction
17	Process/ID Fan malfunctioned or shut down unexpectedly	Malfunction
18	Malfunction of sprays at spray tower	Malfunction
19	Process gas temperature was out of optimum range	Malfunction
20	Electrical surge / outage / power bump	Malfunction
21	Unknown cause	Other
22	Dirty monitor lens	Malfunction
23	Monitor failed or began sending erroneous data	Malfunction
24	Other cause	Other

A	Startup, shutdown, or slowing down of the process	S & S
B	Control equipment not functioning properly	Malfunction
C	Problem with process	Malfunction
D	Routine maintenance or other known problem	Non-violation
E	Unexplained cause	Other

Start Up/Shutdown:

1	Kiln start up
3	Raw mill start up
5	Opacity increased while starting up auxiliary equipment
2	Kiln Shut down
4	Raw mill shut down
12	Lost auxiliary equipment
14	Working in/on process system
15	Working in/on Pollution Control Equipment

Malfunction of the Process Equipment:

6	Erratic feed rate
7	Erratic fuel rate
8	Plugged system
9	Broken dust collector bag(s)
10	Electrical malfunction in precipitator
11	Mechanical malfunction in precipitator
13	Lost spray tower exit temperature control
16	Fan output began ramping up or down
17	Process/ID Fan malfunctioned or shut down unexpectedly
18	Malfunction of sprays at spray tower
19	Process gas temperature was out of optimum range
20	Electrical surge/outage/power bump
B	Control equipment problems
23	Monitor failed or began sending erroneous data
22	Dirty Monitor Lens

Unknown or Permitted Cases:

21	Unknown cause
24	Other cause
E	Unexplained cause

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IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF WYOMING

Biodiversity Conservation Alliance and Sierra Club,	)	
Plaintiffs,	)	Case No. 04CV 361-B
v.	)	
Mountain Cement Company,	)	
Defendant.	)	

AFFIDAVIT OF RALPH L ROBERSON, RMB CONSULTING & RESEARCH, INC.

STATE OF NORTH CAROLINA)
)ss.
County of Wake)

Ralph L. Roberson, with RMB Consulting & Research, Inc. (RMB) being first duly sworn, deposes as says as follows:

1. I am over the age of 21 and fully competent to make this affidavit.

2. The facts and matters stated herein are within my personal knowledge, and are true and correct.

EXHIBIT
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3. I received my Bachelors and Masters degrees in mechanical engineering from the University of Virginia.

4. I am a registered professional engineer and president of RMB Consulting & Research, Inc.

5. I have approximately 35 years of experience in analyzing air pollution emission standards, conducting air pollution measurements, and assessing the performance of air pollution control technology. Since 1975, I have reviewed, analyzed and provided technical comments on every rule proposed by EPA that affects continuous emission monitors and continuous emission monitoring requirements for power plants and other industrial sources.

6. In 1983, I was the principal author of *Continuous Emission Monitoring Guidelines*, a document published and still being used and updated by the Electric Power Research Institute (EPRI).

7. For the past decade, I have worked extensively to develop the use of state-of-the-art statistical techniques for (1) estimating emissions and analyzing emission data; (2) determining achievability of emission standards; and (3) assessing impacts on ambient air quality.

8. During the preceding 4 years I have testified at the trial of *Grand Canyon Trust et al. v. Public Service Company of New Mexico*, No. CV 02-552 BB/ACT (New Mexico), and I have given depositions in the following two cases: *United States et al. v. Ohio Edison et al.*, No. C2-99-1181 (S.D. Ohio), and *Sierra Club, et al. v. NREPC, et al.* File Nos. DAQ-26003-037 and DAQ-26048-037 (Kentucky Administrative Proceeding).

9. The Mountain Cement Company ("MCC") retained me to provide expert opinion on the two primary methods of measuring opacity (i.e., EPA Reference Method 9 and continuous opacity monitoring systems (COMS)).

Summary of Conclusion

10. In my opinion, because of its original development as a "periodic" standard, the Wyoming opacity standard, when enforced with COMS data, is considerably more stringent than the limit when enforced with periodic Method 9 observations. This principle will be discussed in detail in subsequent sections of my expert report. In recognition of this principle, a number of states have or are in the process of amending their visible emissions rules to adjust the stringency to account for the use of COMS data. I believe that had Wyoming had COMS data when the opacity standard was developed many years ago, Wyoming would in all likelihood have provided de minimis relief periods during which excursions above the numerical limit are excused.

Bases for Opinions

11. The MCC facility produces Portland cement using two coal-fired kilns and various other process components including raw mills, clinker coolers, and material handling equipment.

12. In simple terms, the Portland cement process involves blending limestone with shale or clay and iron and grinding the material into a fine powder, which is called raw meal. The raw meal is fed into a rotary kiln, which uses coal to generate the temperatures necessary to form clinker. The clinker is cooled, mixed with gypsum and ground into a fine power, which is Portland cement.

13. In this Affidavit, I present a comparison of the two opacity measuring methods, the resulting impact on the stringency of the opacity standard applicable to MCC's plant located in Laramie, Wyoming when using periodic readings (i.e., Method 9) versus the use of continuous data (i.e., COMS), and other technical issues related to monitoring opacity from flue gas stacks.

Overview of Types of Emission Standards

14. Emission standards developed by regulatory agencies generally fall into two categories: (1) periodic standards – in which the evaluation of the source and the control equipment is based on limited periodic "snapshots" of emissions using short-term tests performed during representative operating conditions (e.g., stack tests, Method 9 data); and (2) continuous standards – in which the evaluation of the source and of the control technology is based on data obtained from continuous monitoring, that is, data collected during all operating conditions.

15. The primary characteristic of a "periodic" standard is that it is developed from the analysis of a limited data set collected during representative operating conditions. Periodic emission tests cannot quantify long-term variability in the operation of a source or in the operation of any control technology.[1] Emission standards developed from such periodic tests are therefore not designed to be monitored on a continuous basis. Thus, in my opinion, data obtained from continuous monitoring systems, such as COMS, should not be used as a measure of compliance with emission standards based on periodic tests such as Method 9. In contrast, "continuous" standards that are developed based on long-term, continuous emissions data allow the variability of both the source and the control technology to be factored into the setting of an emission standard.

[1] Throughout this Affidavitt, when I use the phrase, *variability*, with respect to the operation of a source, I am referring to the fact that, in my opinion, no process or piece of equipment operates as designed 100 percent of the time. In fact, processes and equipment are subject to breakdowns, malfunctions, and other natural perturbations.

16. When short-term tests are used to collect the data for the development of "periodic" standards, the compliance method specified for such standards is generally the same periodic test performed under "representative" (but not all) operating conditions. Similarly, when continuous data are used to develop "continuous" standards, the continuous method (e.g., a continuous emission monitor) is generally specified for determining compliance with those standards.

17. From time to time, regulatory agencies are faced with a situation in which a continuous method for monitoring emissions from a source becomes available long after a standard based on periodic test data has been established. In such situations, the application of the continuous method to determine compliance with a periodic standard would make the standard more stringent. To maintain the same stringency, agencies convert the "periodic" standard to a "continuous" standard before requiring the use of the continuous method for determining compliance. In making this conversion, agencies recognize that the stringency of an emission limit is determined not just by the numerical value of the standard but also by the averaging time associated with the numerical limit and the method used to make emission measurements. Agencies generally convert a "periodic" standard to a "continuous" standard by adjusting the averaging time or by providing for de minimis relief periods during which excursions above the numerical limit are excused.

18. The examples provided below illustrate this point in the context of EPA's rulemaking process for New Source Performance Standards (NSPS) under the Clean Air Act and State agency revisions to opacity standards as a result of the availability of COMS data.

Interrelationship of the Elements that Make Up Emission Standards

19. As previously stated, an emission standard consists of at least three essential, interrelated elements: (1) the numerical limit, (2) the averaging time, and (3) the compliance measurement method and/or frequency. The following examples taken from EPA rulemaking actions illustrate the Agency's recognition that altering any one of the interrelated elements of an emissions standard without making a compensating adjustment can affect the stringency of the underlying standard. Paragraphs 67 through 70 of this Affidavit will provide similar examples of regulatory actions, taken at the state level, that reflect acknowledgment of the impact of measurement frequency on the stringency of an emission standard.

Averaging Time

20. The interrelationship of numerical emission limits and averaging time is illustrated by EPA's rulemaking efforts in developing standards for new utility boilers in 40 CFR 60, Subpart D. EPA proposed and promulgated Subpart D in 1971.[2] At that time, EPA's data for developing emission standards were limited to periodic, snapshot measurements. EPA analyzed these data and set standards for particulate matter (PM), opacity, SO_2 and NO_x. To be consistent with the supporting data (and recognizing that continuous measurement technology was still under development), EPA specified compliance demonstrations be based on the periodic application of manual test methods to be conducted under representative operating conditions.

21. In contrast, when EPA undertook revising the NSPS in the late 70's, the Agency decided it wanted to use continuous data for its SO_2 and NO_x emission standards. Accordingly, EPA used continuous emission monitors (CEMS) to collect the background data, conducted a

[2] Subpart D applies to fossil fuel-fired steam generators (i.e., boilers) for which construction commenced after August 17, 1971

rigorous statistical analysis of the data, and concluded that rolling 30-day averages were appropriate for the numerical emissions limits that the agency had selected.

22. In October 1983, EPA proposed to change the compliance method for the Subpart D SO_2 NSPS from a periodic method to a continuous method.[3] At the heart of EPA's proposal was a switch from periodic measurements (i.e., EPA Method 6) to continuous emission measurements (i.e., CEMS).

23. When considering this change to the measurement procedure, EPA recognized that it also needed to address the issue of averaging time. After reviewing the underlying database, especially the data pertaining to the sulfur content of coal, EPA concluded that a 30-day rolling average would be the appropriate averaging time to maintain consistency with the Subpart D SO_2 NSPS as it was promulgated in 1971.

24. In its October 1983 proposal, EPA produced two tables that clearly illustrate the relationship between numerical limits and averaging times. Table 1 in EPA's proposal presented the range of average sulfur concentration in coal required to meet the 1.2 lb/10^6 Btu emission limit as a function of averaging time. Table 2 listed the U.S. low-sulfur coal reserves that would be expected to comply with various mean sulfur concentrations listed in Table 1. When Tables 1 and 2 are read together, it is apparent that a short-term (e.g., 3-hour) interpretation of the NSPS would severely limit the supply of compliance coal. However, on a longer-term basis (i.e., 30-day rolling average), about 25 percent of the known U.S. coal reserves could comply with the 1.2 lb/10^6 emission limit. Since this outcome was the Agency's original intent of the NSPS, EPA concluded that a 30-day rolling average would be the appropriate averaging time to couple with continuous SO_2 monitoring data.

[3] 48 Fed. Reg. 48960 (October 21, 1983).

25. Although EPA never finalized this rulemaking, the Agency's technical analysis clearly quantifies the relationship between numerical limits and averaging times. Since the revisions to Subpart D were not finalized, the SO_2 standard in this rule remains a periodic standard.

26. Another example of the relationship of averaging time and stringency of an emission standard can be found in the sulfur dioxide (SO_2) portion of the NSPS proposed by EPA for fluid catalytic cracking unit (FCCU) regenerators at petroleum refineries.

27. In its proposal, EPA specified a 3-hour averaging time for the SO_2 emission standard for new, modified, and reconstructed FCCUs.[4] Commenters stated that the averaging time should be increased because 3 hours did not provide adequate time to adjust parameters, to account for the natural variability of the operating process as well as the air pollution control technology, and thus assure compliance with the proposed emission standard at all times.

28. In promulgating the final rule, EPA stated that it had statistically analyzed the long-term variability of SO_2 emissions from FCCUs by conducting a time series analysis of continuous emission data from a recent EPA study. EPA concluded that the averaging time did, indeed, need to be lengthened in order for the numerical limit to be consistently achieved with the use of continuous emission monitors. Accordingly, EPA revised the proposed averaging time for the SO_2 emission standard from 3-hours to 7-days.[5]

Compliance Measurement Methods

29. The relationship of the stringency of an emission standard and measurement procedure (e.g., measurement frequency) is illustrated in EPA's NSPS rule for kraft pulp mills (i.e., paper mills). The preamble to that rule also provides an excellent discussion regarding how

[4] 49 Fed. Reg. 2058 (January 17, 1984).
[5] 54 Fed. Reg. 34008 (August 17, 1989).

EPA can use both periodic tests and continuous monitoring data to achieve the objective of the NSPS program.

30. The first objective of an NSPS is to ensure that an affected source installs and operates the best demonstrated control technology.[6] EPA selects a numerical emission limit to reflect the performance of the best system of emission reduction when properly operated and maintained. The required performance test verifies the ability of the source to meet that emission limit.

31. The second objective of an NSPS is to ensure that the source complies with the general duty to properly operate and maintain its equipment.[7] I believe EPA recognized that performance tests are time consuming and expensive to perform, and that continuous monitors could play an important surveillance role in verifying a source's general duty to operate equipment consistent with good air pollution practices, but this surveillance role did not contemplate using the continuous monitoring data to verify whether the emission limit of a "periodic" emission standard was being met.

32. EPA determined that continuous monitors could be useful in identifying periods of excess emissions. Reports of excess emissions, in turn, could provide the Agency with information to determine if a source is meeting its general duty requirements to operate and maintain equipment to minimize emissions. EPA also realized that the continuous monitors (because of their capability of continuous measurements) identify all periods of excess emissions, including those that are not the result of improper operation of control equipment. EPA acknowledged that excess emissions encountered during start-up, shutdown, and

[6] Section 111 of the Clean Air Act states, "a standard of performance shall reflect the degree of emission limitation and the percentage reduction achievable through application of the best technological system of continuous emission reduction ... the Administrator determines has been adequately demonstrated."
[7] The "General Duty" provision of the NSPS is codified in Title 40, Code of Federal Regulations, §60.11(d).

malfunctions are generally unavoidable and should not be attributed to improper operation and maintenance.

33. I also believe EPA recognized that process and pollution control equipment does not always perform as designed and thus excess emissions, which occur as a result of inherent variability or fluctuation within a process, should not be attributed to improper operation and maintenance of the control technology.

34. Accordingly, in the kraft pulp mill NSPS, EPA established both a periodic Method 9 opacity and a parallel continuous monitoring opacity standard. The periodic opacity limit is 35 percent when measured by Method 9; but when continuous monitoring is used, periods in excess of 35 percent opacity are not violations unless more than 6 percent of the readings (excluding startup, shutdown, and malfunction) in a calendar quarter exceed 35 percent. In other words, there is a 6 percent de minimis level when compliance with the opacity limit is based on continuous monitoring data.[8]

35. EPA tempered the stringency that would have resulted from the use of any or all of the continuous opacity data from the monitors by providing a de minimis exceedance level in recognition of the frequency of measurement.

Numerical Limits

36. Finally, an example of the adjustment of the stringency of an emission standard by modification of the numerical limit is EPA's revision to the NSPS for the primary aluminum industry. EPA originally promulgated a fluoride emission limit of 1.9 lb/ton of aluminum produced for prebake plants and 2.0 lb/ton for Soderberg plants. Shortly after promulgation, several aluminum companies filed petitions for administrative review of the NSPS arguing that the emission limits could not be achieved at all times - even by the best-controlled facilities.

[8] See 40 CFR Sections 60.282(a)(1)(ii) and 60.284(e)(1)(ii).

37. In response to the petition for review, EPA embarked on a program to collect additional data from the newest aluminum smelter in the U.S. After analyzing the new data, EPA concluded that the petitioners' argument was valid. To rectify the compliance problem, EPA reiterated the original emission limits but added regulatory language stating that emissions between 1.9 and 2.5 lb/ton for prebake plants and 2.0 and 2.6 lb/ton for Soderberg plants would be considered to be in compliance.[9] These excursions above the originally promulgated standard were allowed by EPA to account for the inherent variability of the fluoride emissions from the aluminum production process. The amended rule allowed for those excursions expressly in conjunction with a new requirement to conduct performance tests more frequently – monthly instead of annually, as originally required.

38. In sum, EPA adjusted the stringency of the standard using a combination of increased testing frequency with a relaxed numerical limit to make the emission standard consistent with the underlying data.

Methods of Measuring Opacity

EPA Method 9

39. Historically, the method used by a regulatory agency to verify that a source was operating and maintaining its particulate control technology in accordance with good engineering practices was that of visual observations of the stack plume, often conducted beyond the fence line of the facility. Such observations could be done only infrequently (and still can be done only infrequently).

40. Conducting opacity observations is a labor-intensive proposition. One observer, who must be qualified and certified in accordance with the requirements of EPA Method 9, is required per stack or per observation. More importantly, EPA Method 9 contains a number of

[9] 45 Fed. Reg. 44202 (June 30, 1980).

requirements for conducting opacity readings that inherently limit the frequency at which such readings can be performed. For example, §2.1 of EPA Method 9 states, . . . "the qualified observer shall stand at a distance sufficient to provide a clear view of the emissions with the sun oriented in the 140° sector to his back."[10] Thus, from a "requirements perspective," Method 9 observations can only be conducted a small fraction of the time that a plant can operate and, specifically, can not be conducted during a significant portion of a source's potential operating hours (e.g., at night, when precipitation is falling, etc.).

41. There are also practical and cost considerations that limit the frequency at which regulatory agencies can reasonably be expected to conduct Method 9 observations. Perhaps the most obvious is the amount of manpower required — to drive to a source, to obtain permission/clearance to enter the facility (when necessary), to properly position the observer with respect to the sun and the stack (per Method 9 requirements), and to take opacity readings for perhaps up to 1 hour.

42. As a result of the manpower requirements and given all of the other duties of agency field personnel, Method 9 opacity readings have typically been conducted no more than once or twice per year at major sources. If there is a single, most prevalent schedule, it is for the regulatory agency to dispatch a certified observer to conduct Method 9 opacity readings concurrently with the source's annual particulate matter (PM) emission tests.

COMS

43. COMS, on the other hand, is an instrument system designed to measure the attenuation of projected light due to the absorption and scattering of the light by PM in a gas

[10] Title 40, Code of Federal Regulations, Part 60, Appendix A, Method 9, §2.1.

tream. The basic components of a COMS are a light source, a retroflector (essentially a mirror), and a light detector.

44. In a typical application, light travels from the light source across the gas stream to the retroflector, and then is reflected back through the gas stream to the light detector. As light travels through the gas stream some will be absorbed or scattered by the PM and not reach the detector. The transmittance through the gas stream is reduced, allowing only a percentage of the original light intensity to be measured by the detector. Opacity is related to transmittance by the following expression.

$$Opacity\ (\%) = 100 - Transmittance\ (\%)$$

45. In order to produce acceptable data, a COMS must meet the performance requirements set forth by EPA in Performance Specification 1 (PS-1).[11] Although COMS technology is relatively simple, in my opinion COMS measurements can nevertheless be subject to inaccuracies and biases, and it is noteworthy that all of the typical operating problems with COMS (e.g., misalignment of the transceiver and the retroreflector; dirt on optical surfaces; etc.) result in the readings being higher than the true opacity. Stated another way, typical breakdowns in the operation of COMS tend to produce readings that are biased high.

46. In 1996, Tom Rose prepared a report examining the potential errors in COMS measurements.[12] Basing his analysis on the measurement deviations permitted by PS-1, Mr. Rose concluded that the potential COMS measurement error is +7.5 percent opacity. Mr. Rose went on to conclude:

> COMS are useful as an indicator of baghouse performance but should not be used as the deciding factor to measure violations unless the 7.5% margin of

[11] Title 40, Code of Federal Regulations, Part 60, Appendix B, Performance Specification 1.
[12] "Analysis of Errors in Continuous Opacity Measurement Systems," Tom Rose, prepared for Steel Manufacturers Association, December 2, 1996.

error is used. As with any measurement system, knowledge of the errors associated with the measurement is necessary in the compliance/non-compliance decision process.

47. To date, EPA has not promulgated any significant quality assurance (QA) requirements to detect and correct such problems after certification – perhaps because COMS is neither a reference method nor the specified compliance method for EPA-developed opacity standards. In my opinion, without such QA requirements it is difficult to assess the accuracy of ongoing COMS measurements.

Statistical Considerations Related to the Stringency of Emissions Standards

48. Over the past 30 plus years of experience, I have examined numerous emission datasets. These datasets have included SO_2 emissions, NO_X emissions, and opacity data. Almost without exception, these data tend to fit a lognormal distribution.

49. A lognormal distribution is a skewed distribution, one that is characterized by having an elongated tail instead of the classical bell-shaped curve characteristic of a normal distribution. It is relatively easy to visualize why emission distributions are lognormal. Emissions are naturally limited at zero (i.e., emissions cannot be negative), but for practical purposes, there is almost no upper bound limit to how high any specific air pollutant emission can be. Of course, opacity emissions are mathematically constrained at 100 percent and also at 0 percent. However, because of the installation and operation of highly efficient PM control technology, opacity readings also tend to be lognormally distributed with the tail or skewness being toward that of the higher opacity readings -- such as the example curve shown in Figure 1 of Appendix A.

50. The form of the distribution of opacity readings is very important, especially in the case where measurements or readings are conducted periodically, rather than continuously.

As explained below, when measurements are conducted only periodically, the results obtained will be those that occur most frequently.

Statistically-Based Solution

51. One way of approaching the stringency issue is to pose the question, "How often would Method 9 readings have to be taken in order to record at least one opacity excursion in excess of 40 percent?"

52. The probability ("P") of making a number of observations ("n") and not observing an event that occurs randomly twice out of every 100 possibilities (i.e., frequency of occurrence = 2%) is given by the equation $P = 0.98^n$. Likewise, the probability of making n observations and observing an event that occurs only two times out of every 100 possibilities is given by $P = (1 - 0.98^n)$.

53. I have solved this equation for a series of observations (n) and plotted the results as Figure 2 of Appendix A. What Figure 2 and the solution to the equation illustrates is that if you wish to be 95 percent confident in observing an event that occurs 2 percent of the time, then you must make at least 148 random observations. Likewise, if you wish to be very confident (i.e., 99 percent) in observing an event that occurs 2 percent of the time, then you must make 228 random observations.

54. This statistical analysis relates to Method 9 observations as follows. Suppose a source has 6-minute average opacity readings in excess of 40 percent 2 percent of the time. Further, suppose that you wish to have a 95 percent confidence of recording at least one such exceedance. Then, my statistical analysis shows that an observer would have to conduct 148 random Method 9 observations in order to be 95 percent certain of recording at least one exceedance.

55. This statistical analysis is independent of time. That is, if a regulatory agency wished to detect, at a 95 percent confidence level, one exceedance during a calendar quarter then the agency would have to take 148 randomly spaced readings during the quarter. If the agency wished to detect, at a 95 percent confidence level, one exceedance during a calendar year then the agency would have to take 148 randomly spaced readings during the year.

56. Obtaining 148 random Method 9 observations would effectively require the performance of 148 Method 9 observations of a single stack. Clearly, conducting 148 Method 9 tests every quarter (more than one test per day per stack) or 228 per quarter if a confidence level of 99 percent were desired, is beyond what any regulatory agency could reasonably be expected to perform.

Additional Statistical Approach

57. As previously discussed, periodic emission standards are those that were developed using periodic and limited test data. Accordingly, the supporting databases tend to be insufficient to characterize the variability in either the process or the air pollution control technology. For that reason, such standards are typically set at levels that may well be exceeded during any given test. Typically, such standards are set at a 5 to 10 percent probability of failure level along with the implicit assumption that compliance tests can only be conducted infrequently.

58. In 1995, Robert Ajax authored a paper that discussed the relationship of measurement frequency and the stringency of technology-based emission limits.[13] Table 2 from the Ajax paper is reproduced below.

[13] "The Effect of Compliance Test Frequency on the Stringency of Technology Based Standards," Robert L. Ajax, March 9, 1995.

Number of Exceedances Expected

	Frequency of Compliance Computation			
Probability Level of Standard	Every 6 Min.	Every 6 Hrs.	Daily	Annually
90%	8,760/yr	219/yr	36/yr	1/10 yr
95%	4,380/yr	110/yr	18/yr	1/20 yr

Mr. Ajax's tabulation compliments the statistical approach presented in paragraphs 51 through 56 of this Affidavit. That is, Mr. Ajax's table enumerates the number of exceedances expected as a function of measurement frequency and probability of compliance. For example, if a source were in compliance 95 percent of the time and compliance were measured every 6 minutes, then 4,380 exceedances would be expected per year. On the other hand, if compliance were measured daily, only 18 exceedances would be expected per year.

Combining the Statistical Approaches

59. Paragraphs 51 through 56 of this Affidavit answered the question, "How frequently must one make measurements in order to determine a specified (e.g., 2 percent) exceedance rate, at various levels of confidence?" Given a measurement frequency, paragraphs 57 and 58 enumerate the number of expected exceedances as a function probability of compliance.

60. These two analyses approach the question in more or less opposite directions, yet reach a consistent conclusion – that the stringency of an emission standard is strongly dependent on the frequency of measurement. In other words, increasing the measurement frequency will increase the stringency of a standard unless one of the other elements (e.g., averaging time) is adjusted.

61. Thus, it is my opinion that switching from Method 9 to COMS to enforce Wyoming's opacity standard without a revision to one of the other elements of an emission

standard (e.g., averaging time or numerical limit) results in a significantly more stringent opacity standard.

Recent Recognition By States That COMS Is More Stringent Than Method 9

62. Recently, a number of states have begun to revise their opacity regulations to account for measurement with continuous monitors while maintaining a periodic Method 9 compliance test. Such regulatory revisions are quite consistent with the action taken by EPA in the previously discussed kraft pulp mill NSPS.

Alabama

63. For a number of years, coal-fired utility boilers in Alabama have been subject to a visible emission standard, which is codified as Alabama Department of Environmental Management (ADEM) Rule 335-3-4.01(1). The visible emission standard was not developed using continuous monitoring data since such data were not available at the time the standard was developed more than 30 years ago.

64. Under the Alabama rule, compliance with the visible emission standard is determined periodically by a certified observer making opacity readings in accordance with EPA Method 9. Alabama Rule 335-3-4.01(a) limits opacity to 20 percent, as determined by 6-minute averages. The 20 percent opacity limit in the current Alabama regulations and included in the Alabama SIP was developed as a periodic standard to be verified with Method 9. However, under ADEM Rule 335-3-4-.01(1)(b), visible emissions up to 40 percent are permitted during one 6-minute period in any 1-hour period, and emissions during startup, shutdown, and load change events are excluded.

65. Recently, the Alabama Department of Environmental Management (ADEM) proposed to amend its visible emissions regulation. Specifically, ADEM proposed to amend

Rule 335-3-4-.01 by adding 335-3-4.01(3), 335-3-4.01(4) and 335-3-4.01(5). New paragraph (3) sets forth the requirements that a COMS must meet in order to be used to determine compliance with the visible emissions rule, which is provided in paragraph (1) of this rule. New paragraph (4) is the linchpin of ADEM's proposed rule amendment. Paragraph (4) states, "the permittee will not be deemed in violation of Rule 335-3-4-.01(1) if the non-exempt excess emissions periods do not exceed 2.0 percent of the source operating hours for which the opacity standard is applicable and for which the COMS is indicating valid data."

66. This is clear evidence that ADEM understands the difference between periodic and continuous standards, and recognizes that its 20 percent periodic (Method 9) opacity limitation cannot be achieved by a source operating its equipment consistent with good air pollution control practices during all operating periods, even when non-exempt periods are excluded. In other words, when changing from a periodic compliance method (e.g., Method 9) to a continuous compliance method (e.g., COMS data), an accompanying change is required (i.e., creating the 2 percent exemption) to maintain the stringency of the original visible emissions standard.

North Carolina Rule

67. The North Carolina Department of Environment and Natural Resources recently revised the North Carolina SIP with respect to the use of COMS data for opacity. North Carolina amended its visible emissions standard to establish a "reasonable procedure" for sources using COMS to demonstrate compliance with the visible emission standard. After first deducting potentially numerous exemptions (i.e., startup, shutdown, malfunction and other scenarios under

the rule), the North Carolina rule allows opacity readings in excess of the numerical limit 0.8 percent of the time.[14]

68. EPA approved this standard, after evaluation by North Carolina and others on the grounds, in part, that the rule "is designed to provide sources using COMS the same opportunity to comply with the visible emissions rule as sources that do not use COMS devices."[15] In other words, EPA concurred that the use of COMS to determine compliance with a standard developed with the intent to be enforced with Method 9 would result in a more stringent standard unless the numerical limit was revised upward or a de minimis excess emission period was excluded.

Ohio

69. Similarly, following the current trend of promulgating continuous standards, which are modified to be equivalent to historical periodic standards, the Ohio Environmental Protection Agency in 2002 revised its regulations with respect to the use of COMS data. Ohio revised Rule 3745-17-03(B), to state that during each calendar quarter, the permittee shall be deemed in compliance with the opacity standard if the following conditions are met:

> 1. *The nonexempt opacity values in excess of twenty per cent opacity are less than 1.10 per cent of the six-minute average opacity values.*
> 2. *None of the nonexempt six-minute average opacity values exceeds sixty per cent.*
> 3. *The total amount of time, in hours, of exempt[16] and nonexempt opacity values greater than twenty per cent and less than sixty per cent (not including start-up, shutdown, and malfunction exemptions) does not exceed the product of 0.10 times the actual number of hours the emissions unit was in operation during the calendar quarter.*

Strangely, EPA is proposing to disapprove the Ohio revisions that provide for the use of continuous opacity monitoring (COM) data to determine compliance with opacity limits, but

[14] The numerical opacity limit in the North Carolina rule for sources in operation prior to July 1, 1971 is 40 percent.
[15] 70 Fed. Reg. 28496 (May 18, 2005). EPA's is proposing to approve, in its entirety, the Visible Emissions portion of the North Carolina State Implementation Plan (SIP).
[16] Exempt opacity values are specifically defined in Ohio Rule 3745-17-07(A).

allow specified de minimis periods. Apparently, because of the de minimis exemption periods, EPA proposes to find that the Ohio revisions constitute a relaxation of the existing Ohio opacity rules.[17] I term EPA's proposal "strange" because approximately 6 weeks earlier, the Agency proposed to approve a very similar SIP revision submitted by North Carolina (see discussion in paragraphs 67 and 68).

Tennessee

70. In Tennessee, compliance with the State's visible emissions standard is to be determined periodically by a certified observer making opacity readings in accordance with EPA Method 9. However, under Tennessee Department of Environment and Conservation (TDEC) Rule 1200-3-5-.03(5), the Technical Secretary may agree to the use of continuous opacity monitors (COMS) for determining compliance with the opacity limit after specifying in the appropriate permit the operational availability and quality assurance requirements for the COMS. For fuel burning sources, TDEC Rule 1200-3-20-.06(5)(a) defines a de minimis period for opacity in excess of the applicable opacity limit to be equal to 2 percent of facility operating time per calendar quarter, excluding periods of start-up, shutdown, and excused malfunctions. Statistically, this analysis shows that for a fixed opacity percentage limit, COMS with a 2 percent de minimis exemption is likely to be more stringent than the same numerical percentage limit when enforced with periodic Method 9 observations and no de minimis periods.

[17] 70 Fed. Reg. 36901 (June 27, 2005).

Conclusions

71. Based on the foregoing, and in addition to my conclusions contained herein, it is my opinion that:

- The MCC Kiln No. 2 opacity limit, if enforced with COMS data, would be considerably more stringent than the limit when verified with periodic method 9 readings.

Dated this 29 day of July, 2005.

Ralph L. Roberson

State of North Carolina)
)
County of Wake)

Subscribed and sworn to before me by Ralph L. Roberson on this 29th day of July, 2005.

Witness my hand and official seal.

Notary Public

My commission expires: 02-23-09

OFFICIAL SEAL
STACEY TONEY PIERCE
NOTARY PUBLIC - NORTH CAROLINA
WAKE COUNTY
My Comm. Expires 02-23-2009

APPENDIX A

Figure 1. Frequency Distribution of Opacity Data
[One Calendar Quarter]

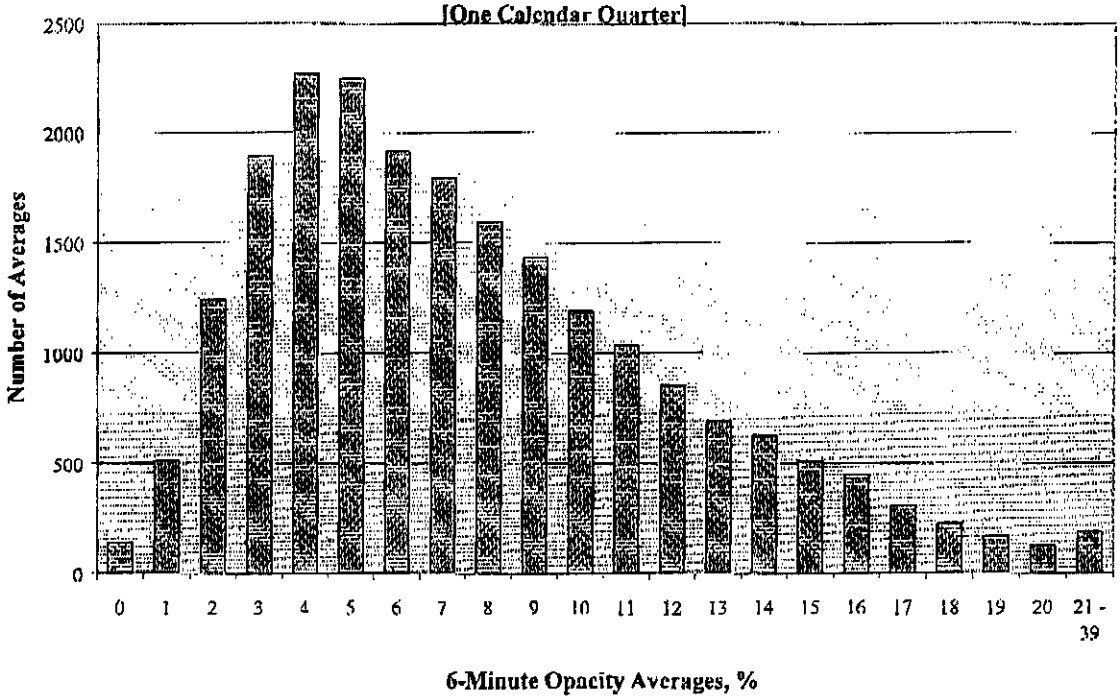

Figure 2. Frequency of Event = 2%